Test: Macroeconomic Variables

Instructor's Version

Answers: Free-Response Questions

1. The circular flow model presents a simplified picture of how money flows through a market economy.

A. There are three important equations that come out of the circular flow model. They come from looking at flows into and out of households, firms, and if you choose to think of it this way, financial markets.

I. What equation is related to flows into and out of households? Explain which components are flows in and which are flows out. (2 points)

Answer:
$a = C + S + T$
Y is the dollar flow into households, and $C, S,$ and T are the dollar flows out of households.

1 point for the equation, 1 point for the explanation.

II. What equation is related to flows into and out of firms? Explain which components are flows in and which are flows out. (2 points)

Answer:
$Y = C + I + G + (X - M)$
Y and M are the dollar flows out of firms, and $C, I, G,$ and X are the dollar flows into firms.

1 point for the equation, 1 point for the explanation.

III. What equation is related to flows into and out of financial intermediaries? Explain which components are flows in and which are flows out. (2 points)

Answer:
$I = S + (T . G) + (M - X)$.
S, $(T - G)$, and $(M - X)$ are net dollar flows into financial markets, and I is the dollar flow out of financial markets. $(T - G)$ is the government surplus and what the government sends to financial markets. This, of course, usually takes the form of a government deficit, $G - T > 0$, and the government must borrow from financial markets. $M - X$ is saving by foreigners and is equal to the (balance of) trade deficit.

1 point for equation, 1 point for explanation.

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B. Consider an economy in which $Y = 1800$, $I = 400$, $G = 400$, $T = 300$, and with $M = X$. Solve for consumption spending and household saving. (2 points)

Answer:
From the first equation,
$Y = C + I + G + (X - M)$
$1800 = C + 400 + 400 + 0$
$C = 1000$.

From the second equation,
$Y = C + S + T$
$1800 = 1000 + S + 300$
$S = 500$.

1 point for each of the two numerical answers.

C. Consider an economy in which $I = 800$, $S = 700$, $T = 500$, $G = 600$, and with $M = X$.

I. Using the third equation you found in part A, show that the financial market is not in equilibrium. (2 points)

Answer:
Looking at the investment = savings equation, $I = S + (T - G) + (M - X)$, we see that
$800 > 700 + (500 - 600) + 0$
$800 > 600$

1 point for equation, 1 point for accurate arithmetic.

II. What should happen to the interest rate to bring the financial market into equilibrium? Explain your answer. (3 points)

Answer:
Because investment (I) is greater than total saving, financial markets cannot be in equilibrium. The amount flowing out of financial markets is greater than the amount flowing in.

To bring the market into equilibrium, there must be fewer dollars going out of financial markets and more going in. This is consistent with higher interest rates, so higher interest rates would move the market toward equilibrium (with capital flowing into the financial market).

1 point for saying higher interest rates will bring the market into equilibrium and 2 points for explaining that it will bring more savings in and decrease the amount of borrowing.

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2. The reason governments calculate things such as GDP and unemployment rates is to get a picture of what's happening with their large, complicated economies, and to judge whether the well-being of their population is improving or deteriorating.

A. What would you learn about an economy if you determined that its GNP was growing more quickly than its GDP? Discuss this in a sentence or two. Hint: Be sure to include a definition of GNP and GDP in your answer. (6 points)

Answer:
GNP is the value of goods and services produced by domestically owned firms; GDP is the value of goods and services produced within a country. If GNP is growing more quickly than GDP, this means that production outside the country by domestic firms is growing more quickly than production within the country, suggesting that production is moving to other countries.

6 points for arriving at this conclusion (with the correct definitions). 3 points for accurate definitions of GDP and GNP but an incorrect or irrelevant conclusion or 3 points for incorrect definitions but correct conclusions.

3. The two least-discussed sectors of the economy are the government (also called the public sector) and the rest of the world (also called the foreign sector). An economy that includes foreign trade, or trade with the rest of the world, is called an open economy, and its opposite is a closed economy.

A. Consider the savings equals investment equation, $I = S + (T - G) + (M - X)$.
How is investment affected when an economy moves from being closed to being open? Explain your answer. (4 points)

Answer:
If an economy is closed, there is no foreign trade, so M and X are zero. Opening the economy means that $M - X$ may be positive or negative. If it is positive (if there is a trade deficit), having an open economy will increase investment. If it is negative (if there is a trade surplus), having an open economy will decrease investment.

1 point for saying that opening an economy allows M and X to take some values other than zero.
3 points for saying that if M - X is positive, having an open economy will increase investment and that if M - X is negative it will decrease investment.

B. Consider the leakages equals injections equation, $I + G + X = S + T + M$. What is the effect of a public sector balanced budget (where G=T) on the economy, according to this equation? What if the government runs a budget deficit? (4 points)

Answer:
If there is a balanced budget, no other part of the equation needs to change because $G = T$, and each side of the equation balances.

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If there is a public sector deficit, $G > T$. For the equation to hold, there must be some combination of reduced investment (I), reduced exports (X), increased saving (S), or increased imports (M).

2 points for saying that if there is a balanced budget in the public sector, the equation will not be affected by the existence of a public sector.
2 points for saying that, if G > T, investment or exports will be reduced, or saving or imports will be increased.

4. Economic growth is a very important topic. To the extent that GDP measures the well-being of people in an economy, increases in GDP should translate into increases in standard of living.

A. What measure of GDP is most closely related to the economic well-being of the people in an economy? (4 points)

Answer:
Real per capita GDP is the measure of GDP most closely related to the economic well-being of people in an economy.

3 points for this. No partial credit.

B. If $Y = C + I + G + (X - M)$, is it necessarily true that decreased consumption and increased saving by households will result in lower GDP in the short run?
(4 points)

Answer:
This is not necessarily true. If people save more, this may translate into more investment through financial markets, so decreased consumption won't necessarily result in lower GDP.

4 points for saying that investment will increase if people reduce consumption and increase saving.
3 points for saying something about the savings equals investment or leakages equal injections equation and how other things will increase when consumption decreases.

C. The production possibilities frontier shows output combinations at which an economy can produce given its current resources. On a *PPF* graph, show the long-term effect of increased household saving, and explain the effect in words. (5 points)

Answer:
Increased household saving will lead to greater investment and will cause the *PPF* to shift out more over a long period. Students should show a *PPF* that has shifted out significantly.

3 points for showing an increased PPF with shift on both axes.
2 points for explaining that it leads to greater investment, so greater production potential.

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D. On a production possibilities frontier, the two goods may be classified as "consumption" and "investment" goods. How will the shift in the *PPF* from this year to, say, five years from now differ if we choose a point with high consumption as opposed to choosing a point with high investment? Or a point with high investment goods? Explain in words and with graphs. (6 points)

Answer:
Changing to a point with higher consumption goods will cause the curve to shift less.

Choosing to a point with high investment will result in more growth and a greater outward shift in the *PPF*.

6 points for both answers with graphs; 4 points for answers without graphs; only 2 points if only one half of answer.

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